## AMENDMENT

**IN THE CLAIMS:**

1. (Currently Amended) A polycrystalline diamond element comprising a body of bonded diamonds with a working surface integrally formed with a metallic substrate, the body having at least an 85% by volume diamond density, wherein a first volume of the body remote from the working surface contains a catalyzing material and a second volume of the body adjacent to the working surface is substantially free of the catalyzing material to a depth from the working surface, wherein said bonded diamonds exhibit a thermal ~~gradient of the bonded diamonds causes~~ characteristic such that a 950 degrees C temperature at the working surface ~~to be~~ results in a temperature of less than 750 degrees C at the depth.

2. (Currently Amended) The polycrystalline diamond element of Claim 1, wherein ~~the~~ said bonded diamonds exhibit a thermal gradient ~~is~~ greater than 1000 degrees C per mm.

3. (Currently Amended) The polycrystalline diamond element of Claim 2, wherein ~~the~~ said bonded diamond exhibit a thermal gradient ~~is~~ greater than 2000 degrees C per mm.

4. (Original) The polycrystalline diamond element of Claim 1, wherein the first volume of the body contacts the substrate and has an average thickness greater than 0.15 mm.

5. (Original) The polycrystalline diamond element of Claim 1, wherein a majority of the catalyzing material remaining in the second volume of the body adheres to surfaces of diamond crystals.

6. (Original) The polycrystalline diamond element of Claim 1, wherein an amount of catalyzing material within the second volume of the body continuously decreases with distance from the first volume.

7. (Original) The polycrystalline diamond element of Claim 1 wherein the first volume comprises more than 30% of the body remote from the working surface.

8. (Original) The polycrystalline diamond element of Claim 7 wherein the substrate is tungsten carbide with an iron group binder material.

9.-11. (Canceled)

12. (Original) The polycrystalline diamond element of Claim 1, wherein the body comprises diamond crystals and an interstitial matrix, and wherein the part of the interstitial matrix located within the second volume is substantially free of the catalyzing material, and the interstitial matrix where the body contacts the substrate contains the catalyzing material and has an average thickness greater than 0.15 mm.

13. (Currently Amended) The polycrystalline diamond element of Claim 12, wherein ~~the~~ said bonded diamonds exhibit a thermal gradient ~~is~~ greater than 1000 degrees C per mm.

14. (Currently Amended) The PCD element of Claim 13, wherein ~~the~~ said bonded diamonds exhibit a thermal gradient ~~is~~ greater than 2000 degrees C per mm.

15. (Original) The polycrystalline diamond element of Claim 12 wherein the first volume comprises more than 30% of the body remote from the working surface.

16. (Original) The polycrystalline diamond element of Claim 12, wherein a majority of diamond crystals located within the second volume of the body have a surface which is substantially free of catalyzing material.

17. (Original) The polycrystalline diamond element of Claim 12, wherein a majority of the catalyzing material remaining in the second volume of the body adheres to surfaces of the diamond crystals.

18. (Original) The polycrystalline diamond element of Claim 12, wherein the diamond crystals in the second volume remote from the first volume have less catalyzing material adhering to their surfaces than the diamond crystals in the second volume which are adjacent to the first volume.

19. (Original) The polycrystalline diamond element of Claim 12, wherein an amount of catalyzing material within the second volume of the body continuously decreases with distance from the first volume.

20. (Original) The polycrystalline diamond element of Claim 14 comprising a preform cutting element having a facing table and a cutting surface, wherein the working surface comprises a portion of the cutting surface.

21. (Original) The polycrystalline diamond element of Claim 20, wherein the cutting element is mounted upon a cutting face of a fixed cutter rotary drill bit.

22. (Original) The polycrystalline diamond element of Claim 20, wherein the cutting element is mounted upon a body of a rolling cutter drill bit.

23. (Original) The polycrystalline diamond element of Claim 12, comprising a cutting element with a cutting surface adapted for use as a cutting insert in a machining operation, wherein the working surface comprises a portion of the cutting surface.

24. (Original) The polycrystalline diamond element of Claim 12, comprising a drawing die, wherein the working surface comprises a portion of the drawing die contact surface.

25. (Original) The polycrystalline diamond element of Claim 12 wherein the substrate is tungsten carbide with an iron group binder material.

26. (Currently Amended) A polycrystalline diamond element comprising a diamond containing body comprised of bonded diamonds integrally formed with a metallic substrate, the body having at least an 85% by volume diamond density and an interstitial matrix, wherein the interstitial matrix in the body adjacent to a working surface is substantially free of the catalyzing material to a depth from the working surface, and the interstitial matrix where the body contacts the substrate contains the catalyzing material and has an average thickness greater than 0.15 mm, wherein said bonded diamonds exhibit a thermal ~~gradient of the bonded diamonds causes~~

characteristic such that a 950 degrees C temperature at the working surface ~~to be~~ results in a temperature of less than 750 degrees C at the depth.

27. (Currently Amended) The polycrystalline diamond element of Claim 26, wherein ~~the~~ said bonded diamonds exhibit a thermal gradient ~~is~~ greater than 1000 degrees C per mm.

28. (Currently Amended) The polycrystalline diamond element of Claim 26, wherein ~~the~~ said bonded diamonds exhibit a thermal gradient ~~is~~ greater than 2000 degrees C per mm.

29. (Original) The polycrystalline diamond element of Claim 26, wherein the interstitial matrix in the body adjacent to the working surface of the body has a diamond density higher than elsewhere in the body.

30. (Original) The polycrystalline diamond element of Claim 26, wherein a majority of the catalyzing material remaining in the interstitial matrix in the body adjacent to the working surface of the body adheres to surfaces of diamond crystals.

31. (Original) The polycrystalline diamond element of Claim 26, wherein an amount of catalyzing material within the interstitial matrix in the body adjacent to the working surface of the body continuously decreases with distance from the remaining interstitial matrix.

32.-34. (Canceled)